

(19) World Intellectual Property Organization  
International Bureau(43) International Publication Date  
13 March 2003 (13.03.2003)

PCT

(10) International Publication Number  
**WO 03/020121 A1**

(51) International Patent Classification<sup>7</sup>: **A61B 3/10**

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EI, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number: PCT/US02/27468

(22) International Filing Date: 29 August 2002 (29.08.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 60/316,173 30 August 2001 (30.08.2001) US

(71) Applicants: UNIVERSITY OF ROCHESTER [US/US]; 518 Hylan Building, Rochester, NY 14627 (US). UNIVERSITY OF HOUSTON [US/US]; 316 E Cullen Building, Houston, TX 77204-2015 (US).

(72) Inventor: ROORDA, Austin; 4418 Leeland Street, Houston, TX 77023 (US).

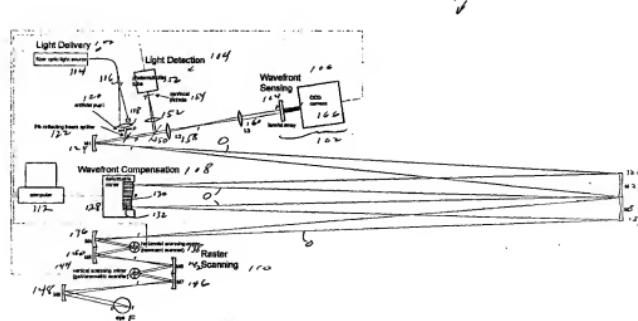
(74) Agents: GREENBAUM, Michael, C. et al; Blank Rome Comisky & McCauley LLP, 900 17th Street, NW, Suite 1000, Washington, DC 20006 (US).

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SI, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**  
with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

## (54) Title: ADAPTIVE OPTICS IN A SCANNING LASER OPHTHALMOSCOPE

**WO 03/020121 A1**

(57) Abstract: A scanning laser ophthalmoscope incorporates adaptive optics to compensate for wavefront aberrations in the eye. Light from a light source (114) is scanned onto the retina. Light reflected from the retina is detected for imaging and is also used for wavefront sensing. The sensed wavefront aberrations are used to control an adaptive optic device, such as a deformable mirror (128), disposed in the path of the light from the source in order to compensate for the aberrations.